
**ANALYSIS OF FACTORS AFFECTING POVERTY LEVELS: A STUDY
OF CENTRAL JAVA PROVINCE**

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Abstract

Poverty is a serious problem because it related to the welfare of human life. Therefore, further research needed on what factors influence poverty. This study aimed to determine the effect of Gross Regional Domestic Products, Total Population, Unemployment Rate, and Human Development Index on Poverty Levels in Central Java Province. This quantitative study uses secondary data for the 2020 period obtained through the Central Java Province Central Statistics Agency Statistic Indonesia website. The research method used is Regression. The results of this study proved that the variable income Gross Regional Domestic Products is not significant to the poverty of Central Java Province, the population variable has a significant effect on the poverty level of the Central Java Province, the unemployment variable has no significant effect on the poverty level of the Central Java Province, the human development index variable has a significant effect on the poverty level of the Central Java Province.

Keywords: Gross Regional Domestic Products, Population, Unemployment, Human Development Index, Poverty

1. Introduction

As a problem for all developing countries, poverty is a significant concern in development goals in developing countries. Poverty in Indonesia is based on the amount of rupiah consumed in the form of food, which is 2100 calories per person per day (from 52 types of commodities which are considered to represent consumption patterns of the population in the lower layers) and non-food consumption (from 45 kinds of food commodities according to national agreement and not differentiated between rural and urban areas). The benchmark for adequacy of 2100 calories applies to all ages, genders, and estimates of physical activity levels, body weight, and estimates of the physiological status of the population. This measure is often referred to as the poverty line. People who have income below the poverty line are said to be in poor condition (Indonesia Statistic, 2021).

Research on poverty is defined as the inability to fulfill minimum living standards. It is a problem all countries in the world, particularly developing countries, should encounter. The poverty level of a country can be a benchmark to see its social and economic conditions. For that

reason, the poverty eradication becomes significant. If poverty is not immediately overcome, it will bring about the decline in the quality of human life and health (Saputro et al., 2019).

There are several factors causing the emergence, namely: low human resources (HR), uncontrolled natural resources being managed, low levels of education, lack of knowledge in developing economic sectors, higher levels of movement, growth the economy continues to decline, and there are many other factors that trigger the emergence of poverty. Some of the consequences of high poverty levels in an area, namely: crime, disease, health problems that will have an impact on mortality rates, social unrest, politics and so on. In the context of alleviating poverty in Indonesia, the government continues to strive to improve development in various regions to achieve general welfare, including the fields of health, education, security, community skills, and so on. However, these efforts are still not effective in reducing poverty properly (Ristika et al., 2021).

Indonesia has 34 provinces, one of which is Central Java Province. Indonesia has 34 provinces, one of which is Central Java Province. Central Java Province is an Indonesian province located in the central part of Java Island. The capital city is Semarang. The province is bordered by the Province of West Java in the west, the Indian Ocean and the Special Region of Yogyakarta in the south, East Java in the east, and the Java Sea in the north. Its area is 32,800.69 km² or about 28.94% of the island of Java. The province of Central Java also includes Nusakambangan Island in the south (close to the West Java border) and the Karimun Jawa Islands in the Java Sea. The population of Central Java based on the Central Statistics Agency in 2021 is 36,516,035 people with a density of 1,113.00 people/km². The population growth of Central Java Province is 0.67% per year. Administratively, Central Java Province consists of 29 regencies and 6 cities.

Central Java Province as the third largest province in Java, of course, has various social problems faced like other regions, one of which is poverty. Every year, poverty is still a social problem that needs to be handled quite seriously and is even one of the priority programs, including for the Central Java Provincial Government (Indonesia Statistic, 2021). Because the problem of poverty in Central Java Province is still classified as a high poverty rate, when compared to other provinces on the island of Java. Poverty reduction efforts in Central Java are carried out through five pillars called the Grand Strategy. First, the expansion of job opportunities, aimed at creating economic, political and social conditions and environments that enable the poor to have opportunities to fulfill their basic rights and improve their standard of living in a sustainable manner. Second, community empowerment, to accelerate social, political, economic, and cultural institutions of the community and expand the participation of the poor in making public policy decisions that ensure respect, protection, and fulfillment of basic rights. Third, capacity building is carried out for the development of basic capabilities, the ability of the poor to take advantage of environmental developments. Fourth, social protection to provide a sense of security for vulnerable groups and the poor, both men and women, caused by natural disasters, economic crises, and social conflicts. Fifth, regional partnerships are carried out for the development and restructuring of local, regional, national and international relations and cooperation to support the implementation of the four strategies above (Sari et al., 2021).

Poverty alleviation in Central Java is through the five pillars, in accordance with the basic causes of poverty, which are influenced by several factors, namely the problem of Gross Regional

Domestic Product (GRDP) Per Capita, Population Growth, Unemployment and The Human Development Index (Sumarsono, 2003). Economic growth can be interpreted as a process of changing the economic conditions of a country or region on an ongoing basis towards a better condition for a certain period (Mulia & Saputra, 2020). One of the factors thought to influence poverty is the large population. According to Malthus' theory, sustainable population growth is a necessary factor to support additional demand. On the other hand, it is feared that the increasing population will have a negative effect on the problem of poverty. Rapid population growth causes the emergence of backwardness problems and causes further development opportunities. Without being followed by the progress of other development factors, population growth certainly cannot increase demand and income (Todaro, 2000).

Furthermore, the problem of poverty that is still related to the large number of people is the availability of employment opportunities that have not been able to meet the needs of the created workforce, thus creating unemployment which leads to the formation of poverty (Ristika et al., 2021). In addition to the population and unemployment rate, the quality of human life is thought to be a factor that causes poverty. The quality of human life is reflected in the human development index (HDI) (Indonesia Statistic, 2021). The low rate of human resources will automatically affect the level of community productivity. The quality of human resources is often associated with the high skills possessed by the community. The existence of training and education is one of the important factors in improving the quality of human resources which later on the quality of human resources can affect the determination of the amount of income received by the community, if these factors are not considered by the government, the poor will be trapped in a cycle of poverty for generations (Sumarsono, 2003). The Human Development Index is one of the development parameters in an area that has a negative correlation with poverty. The higher the HDI number indicates that the quality of human life is also getting better. This figure illustrates an increase in health, a high level of education, and a decent standard of living (Rahayu, 2018).

This paper aims to analyze the Gross Regional Domestic Product (GRDP) Per Capita, the number of population growth, the number of unemployed and the human development index to poverty in Central Java Province in 2020. Selection of the Gross Regional Domestic Product (GRDP) Per Capita, the total population growth, the number of unemployed and the human development index that in the last five years tends to increase every year. The increasing problems mentioned above, Central Java Province every year can cause social problems such as poverty, so the Central Java Provincial Government should carry out strategies in suppressing these problems. And also in 2020 is a year of global crisis due to the covid-19 pandemic; therefore, this writing can find out what factors affect the level of poverty. This research is expected to be useful as a consideration in formulating policies related to poverty based on the results of empirical research.

2. Method

2.1 Research Data

This study uses secondary data obtained from the Central Statistics Agency (Indonesia Statistic, 2021). Descriptive research aims to describe the nature of a situation that is currently running at

the time the research conducted and examined the causes of a particular symptom. This research is a descriptive study because this study describes how the condition of the Gross Regional Domestic Product (GRDP) Per Capita, the number of population growth, the number of unemployment and the human development index in Central Java in 2020 then examines the causes that lead to the symptoms and phenomena that occur in the year.

2.2 Research Variables

The independent variable is the variable that influences or causes the variable, which is denoted by X. In this study, the independent variables used are Gross Regional Domestic Product (GRDP) Per Capita (X1), total population growth (X2), number of unemployed (X3) and human development index (X4). The dependent variable is the variable that becomes the main concern in an observation (Greene, 2002). The dependent variable used in this study is poverty (Y). The Poverty Gap Index (Poverty Gap Index-P1) is a measure of the average expenditure gap of each poor population towards the poverty line. The higher the index value, the farther the average population expenditure is from the poverty line (BPS, 2021).

$$(1) \quad P_{\alpha} = \frac{1}{n} \sum_{i=1}^q \left[\frac{z - y_i}{z} \right]^{\alpha}$$

Information:

$$\alpha = 0$$

z = Poverty Line.

y_i = Average monthly expenditure per-capita of the population below the poverty line (i=1, 2, 3, ..., q), $y_i < z$

q = Number of people living below the poverty line.

n = Total Population.

The Poverty Severity Index (Poverty Severity Index-P2) provides an overview of the distribution of spending among the poor. The higher the index value, the higher the disparity in spending among the poor (BPS, 2021).

2.3 Analysis Method

The data analysis method used in this study is multiple linear regression analysis (Multiple Regression Analysis) with the help of the EViews 9 program. This analysis is intended to examine the Gross Regional Domestic Product (GRDP) Per Capita, the number of population growth, the number of unemployed and the human development index against poverty. Multiple linear regression analysis begins with a data quality test; this test determines the accuracy of the measuring instrument in measuring the object under study. The regression analysis model requires a classical assumption test to interpret the data to make it more relevant in analysis. The regression analysis equation model used in this study is:

$$Y_{it} = \alpha + \beta_1 GRDP_{it} + \beta_2 Population_{it} + \beta_3 Unemployment_{it} + \beta_4 HDI_{it} + e$$

Information:

Y = Poverty

α = Constant

1,2,3 = Regression coefficient of each variable

e = Standard Error

The results of multiple linear regression analysis are also used to answer hypothesis testing. The use of this regression is intended to determine separately (partial) various independent variables that exist without the influence of other variable elements. The hypotheses in this study are as follows:

H1: Gross Regional Domestic Products (GRDP) has a significant effect on poverty;

H2: Population has a significant effect on poverty;

H3: Unemployment has a significant effect on poverty;

H4: Human Development Index has a significant effect on poverty;

In addition, the coefficient of determination (R²) is also calculated, which is used to predict how big the contribution of the influence of the independent variable (X) to the dependent variable (Y) is with the condition that the F test results in the regression analysis are significant. According to (Baltagi, 2003), the coefficient of determination (R²) basically measures how far the model's ability to explain variations in the dependent variable is.

3. Results and Discussion

3.1 Descriptive Statistical Analysis

The descriptive statistics in this study describe Gross Regional Domestic Products (GRDP), population, unemployment, human development index for the period 2020. And the results of descriptive statistics show that the Gross Regional Domestic Products (GRDP), population, unemployment, development index are very high, which will not necessarily lead to a high poverty rate as well. The following is a descriptive statistic from this research.

Tabel 1. Descriptive Statistics Test Results

	N	GRDP	POPULATION	UNEMPLOYMENT	HDI	POVERTY
Mean	35	5.434571	0.770571	4.396286	7.888571	10.42943
Median	35	5.580000	0.660000	4.110000	7.540000	9.710000
Maximum	35	6.810000	1.810000	8.120000	10.690000	16.820000
Minimum	35	2.270000	0.330000	2.540000	6.210000	3.980000
Std. Dev.		0.818260	0.407907	1.537846	1.195012	3.404119

Source: processed data, 2021

Table 1 shows that the lowest Gross Regional Domestic Products (GRDP) is 2.27% which is Cilacap City, while the highest Gross Regional Domestic Products (GRDP) value is 6.81% which is the achievement of Semarang City. The average Gross Regional Domestic Products (GRDP) for the 2020 period is 5.43%. The lowest population is 0.33% which is Magelang City, while the highest population value is 1.81% whis is the achievement of Semarang City. The average population for the 2020 period is 0.77%. Meanwhile, the lowest unemployment is 2.54% which is Semarang Regency, while the highest unemployment value is 8.12% which is the achievement of Tegal Regency. The average unemployment for the 2020 period is 4.39%. And then, the lowest HDI is 6.21% which is Brebes Regency, while the highest HDI value is 10.69% is the achievement of Surakarta City. The average HDI for the 2020 period is 7.88%. Meanwhile, the lowest poverty is 3.98% which is Semarang City, while the highest poverty value is 16.8% which is the achievement of Kebumen Regency. The average poverty for the 2020 period is 10.42%.

3.2 Statistics and Data Analysis

The following are the results of the regression to determine the effect of per-capita income, population, unemployment, and the human development index. The results of the regression can be seen in the following table:

Table 2. Regression Analysis Results

Variable	Coefficient	t-Statistic	p-value.
GRDP	0.579139	1.121709	0.2709
POPULATION	-3.160368	-2.903922	0.0069*
UNEMPLOYMENT	-0.238516	-0.864800	0.3940
HDI	-1.645891	-4.432634	0.0001*
C	23.74966	6.071040	0.0000
Statistical Summary			
Determination Coefficient	0.567145	F-statistic	9.826820
<i>Adjusted R-squared</i>	0.509431	p-value (F-statistic)	0.000033*

Source: processed data, 2021

Note: * significant level of $\alpha = 5\%$

The t-test was conducted to partially see the independent variable and the dependent variable's effect. The test was carried out with a one-tailed test with a significance level of 5%. The t-test compares the calculated t value and the t table value (Gujarati, 2012). Based on table 2, the results of the t-test are as follows:

- The Gross Regional Domestic Products (X1) is smaller than the t table, namely 1.121709 < 1.69552, and the significance is 0.2709 > 0.05. So, the income per capita variable has no effect and is not significant on poverty (Y) partially, so H1 is rejected;
- The population variable (X2) is smaller than t table, namely -2.903922 < 1.69552 but the significance value is 0.0069* < 0.05. So, the population variable has no effect but is significant on poverty (Y) partially, so H2 is accepted;

- Unemployment variable (X3) is smaller than t table, namely $-0.864800 < 1.69552$ and significance $0.3940 > 0.05$. So, the unemployment variable has no effect and is not significant on poverty (Y) partially, so H3 is rejected;
- The human development index variable (X4) is smaller than the t table, namely $-4.432634 < 1.69552$, but the significance value is $0.0001^* < 0.05$. So, the human development index variable has no effect but is significant on poverty (Y) partially, so H4 is accepted;

The adjusted R^2 is about 0.509431. It means that the variation of dependent variable can be determined by the variation of independent variables around 50.94%, while the remaining 49,06% is influenced by other factors outside of the model. Moreover, the F-count value is greater than F-table ($9.826820 > 2.68$) or the probability value (F-statistic) is 0.000000 smaller than the 5% significance level ($\alpha = 0.05$), rejecting H_0 . It can be concluded that simultaneously there is a significant impact between independent variables (Gross Regional Domestic Products, Population, Unemployment, Human Development Index) and the dependent variable Ppoverty).

Another study conducted by (Elok & Wardono, 2020) states that Gross Regional Domestic Products (GRDP) has a significant negative effect on poverty. However, contrary to research (Leonita & Sari, 2019), the partial test showed that the rate of Gross Regional Domestic Products (GRDP) positively influenced the poverty rate. Then the research conducted by Gross Regional Domestic Product (GRDP) has a positive and significant effect in the city of Padang;

Other supporting research results conducted by (Ristika et al., 2021) prove that the population has a significant effect on the poverty level of East Java Province. Then research by (Nurnaningsih et al., 2016) states that population has a positive and significant influence on poverty. And also, research conducted by (Safuridar & Putri, 2019) says that the effect of population on poverty levels in all cities/districts of East Aceh is a significant positive effect;

Supported by other research conducted by (Safuridar & Putri, 2019) said that the probability value of unemployment in Aceh Tamiang District was 0.528 and East Aceh District was 0.452, so it was not significant to the poverty level. Another study by (Mukhtar et al., 2019) that the open unemployment rate has no significant effect on poverty in Indonesia. However, contrary to research conducted by (Budhijana & Bambang, 2017) the unemployment variable has a significant positive effect on the Poverty Level in Indonesia;

Research conducted by (Baihaqi & Puspitasari, 2020) said that the human development index, namely the independent variable, had a significant simultaneous and partial effect on poverty in Aceh Province. Research conducted by (Pratama, 2015) said that the level of human development index (HDI) simultaneously affects the variable rate of poverty; it can be seen from the test that shows the level of significance $f < 0.05$. And research conducted by (Manoppo et al., 2021) says that a significant value of 0.025 means that HDI has a significant effect on poverty levels.

4. Conclusion

In this study it can be concluded that the Gross Regional Domestic Products variable (X1) is smaller than the t table, namely $1.121709 < 1.69552$, and the significance is $0.2709 > 0.05$. So, the income per capita variable has no effect and is not significant on poverty (Y) partially, so H1 is rejected. The population variable (X2) is smaller than t table, namely $-2.903922 < 1.69552$ but the significance value is $0.0069^* < 0.05$. So, the population variable has no effect but is significant on poverty (Y) partially, so H2 is accepted. Unemployment variable (X3) is smaller than t table, namely $-0.864800 < 1.69552$ and significance $0.3940 > 0.05$. So, the unemployment variable has no effect and is not significant on poverty (Y) partially, so H3 is rejected. The human development index variable (X4) is smaller than the t table, namely $-4.432634 < 1.69552$, but the significance value is $0.0001^* < 0.05$. So, the human development index variable has no effect but is significant on poverty (Y) partially, so H4 is accepted.

The adjusted R^2 is about 0.509431. It means that the variation of dependent variable can be determined by the variation of independent variables around 50.94%, while the remaining 49,06% is influenced by other factors outside of the model. Moreover, the F-count value is greater than F-table ($9.826820 > 2.68$) or the probability value (F-statistic) is 0.000000 smaller than the 5% significance level ($\alpha = 0.05$), rejecting H_0 . It can be concluded that simultaneously there is a significant impact between independent variables (Gross Regional Domestic Products, Population, Unemployment, Human Development Index) and the dependent variable (Poverty)

5. Recommendation

This research can be used as a recommendation by the government to formulate policies related to poverty in Central Java Province. In addition, several things that researchers can suggest related to this study include the need for further research, which is expected to uncover, add, and complete the factors that influence poverty levels, especially in Central Java Province. And the government must focus on increasing regional income. With the increase in regional income, it is expected that unemployment will decrease, and poverty levels will also decrease. The human development index also has a role in reducing poverty. For the past five years, the government has also had a policy in increasing the human development index. The government has taken action by carrying out several economic policies for poverty alleviation, such as the implementation of social protection programs and the family of hope program by providing Prosperous Family Cards, Prosperous Indonesia Cards (KIS), Smart Indonesia Cards and the employment SJSN program.

References

- Baihaqi, A. B., & Puspitasari, P. (2020). Analisis Dampak Pengangguran, Indeks Pembangunan Manusia, Zakat Dan Pdrb Terhadap Kemiskinan Di Provinsi Aceh. *Journal Publicuho*, 3(2), 177. <https://doi.org/10.35817/jpu.v3i2.12272>
- Baltagi, B. H. (2005). (2003). *Econometric analysis of panel data 3rd ed. John Wiley & Sons Ltd.*
- BPS. (2021). *Badan Pusat Statistik 2021.*

- Budhijana, & Bambang, R. (2017). *Analisis Pengaruh Pertumbuhan Ekonomi, Inflasi Dan Pengangguran Terhadap Kemiskinan Di Indonesia (2000-2015)*. 3, 43.
- Elok, M., & Wardono. (2020). *Analisis PDRB, IPM, Jumlah Penduduk , Pengangguran , Investasi PMA Terhadap Kemiskinan di Jawa Tengah*. 3, 370–379.
- Greene, W. H. (2002). *Econometric Analysis 5th Ed. Prentice Hall*.
- Gujarati, D. N. (2012). (2012). *Dasar-Dasar Ekonometrika*. Jakarta: Salemba Empat.
- Indonesia Statistic. (2021). *No Title*.
- Leonita, L., & Sari, R. K. (2019). PENGARUH PDRB, PENGANGGURAN DAN PEMBANGUNAN MANUSIA TERHADAP KEMISKINAN DI INDONESIA. *ISOQUANT: Jurnal Ekonomi, Manajemen Dan Akuntansi*, 3(2), 1–8.
- Manoppo, C. V., Pangemanan, P. A., & Laoh, O. E. H. (2021). *ANALISIS PENGARUH PERTUMBUHAN EKONOMI DAN INDEKS PEMBANGUNAN MANUSIA TERHADAP TINGKAT KEMISKINAN DI PROVINSI SULAWESI UTARA TAHUN 2010-2019* *Analysis of the Influence of Economic Growth and Human Development Index on Poverty Level in North Sulawesi 2010 –*. 3, 323–332.
- Mukhtar, S., Saptono, A., & Arifin, A. S. (2019). Analisis Pengaruh Indeks Pembangunan Manusia Dan Tingkat Pengangguran Terbuka Terhadap Kemiskinan Di Indonesia. *Ecoplan: Journal of Economics and Development Studies*, 2(2), 77–89. <https://doi.org/10.20527/ecoplan.v2i2.68>
- Mulia, R. A., & Saputra, N. (2020). Analisis Faktor-Faktor Yang Mempengaruhi Kesejahteraan Masyarakat Kota Padang. *Jurnal EL-RIYASAH*, 11(1), 67. <https://doi.org/10.24014/jel.v11i1.10069>
- Nurnaningsih, L., Riyanto, W. H., & Susilowati, D. (2016). PENGARUH JUMLAH PENDUDUK, TINGKAT KEMISKINAN DAN JUMLAH PENGANGGURAN TERHADAP INDEKS PEMBANGUNAN MANUSIA KABUPATEN/KOTA PROVINSI NUSA TENGGARA BARAT. *Jurnal Ilmu Ekonomi Terapan*, 1(2), 88–104.
- Pratama, Y. C. (2015). Analisis Faktor-Faktor Yang Mempengaruhi Kemiskinan Di Indonesia. *Esensi*, 4(2), 210–223. <https://doi.org/10.15408/ess.v4i2.1966>
- Rahayu, Y. (2018). Analisis Pengaruh Indeks Pembangunan Manusia, Pdrb Per Kapita, Dan Jumlah Pengangguran Terhadap Jumlah Penduduk Miskin Di Provinsi Jambi. *EKONOMIS: Journal of Economics and Business*, 2(1), 165. <https://doi.org/10.33087/ekonomis.v2i1.40>
- Ristika, E. D., Priana Primandhana, W., & Wahed, M. (2021). Analisis Pengaruh Jumlah Penduduk, Tingkat Pengangguran Terbuka Dan Indeks Pembangunan Manusia Terhadap Tingkat Kemiskinan Di Provinsi Jawa Timur. *Jurnal Ilmiah Ekonomi Dan Bisnis*, 12(2), 12(November), 129–136. <https://doi.org/10.33087/eksis.v12i2.254>
- Safuridar, & Putri, N. I. (2019). Pengaruh Indeks Pembangunan Manusia , Pengangguran Dan Jumlah Penduduk Terhadap Tingkat Kemiskinan Di Aceh Bagian Timur. *Jurnal Samudra Ekonomika*, 3(1), 34–46. <https://www.ejurnalunsam.id/index.php/jse/article/view/1295>

- Saputro, D. R. S., Sukmayanti, A., & Widyaningsih, P. (2019). The nonparametric regression model using Fourier series approximation and penalized least squares (PLS) (case on data poverty in East Java). *Journal of Physics: Conference Series*, 1188(1). <https://doi.org/10.1088/1742-6596/1188/1/012019>
- Sari, Y. A., Studi, P., Pembangunan, E., & Ekonomi, F. (2021). *Pengaruh Upah Minimum Tingkat Pengangguran Terbuka Jawa Tengah*. 10(2), 121–130.
- Sumarsono, S. (2003). *Ekonomi Manajemen Sumberdaya Manusia dan Ketenagakerjaan*.
- Todaro. (2000). *Prinsip Metodologi Penelitian Ilmiah*. In Erlangga.